ABSTRACT

A system for determining the amount of processing
that has been applied to watermarked signal. A
steganographic signal is provided that includes an

5   original signal and an embedded fragile watermark. The
fragile watermark is characterized by a low energy and
a high redundancy in comparison to a robust watermark.
The steganographic signal is communicated over a
distribution channel to a decoder. At the decoder, a

10   measure of a presence of the fragile watermark in the
acquired steganographic signal is provided, along with
an estimate of the fragility profile of the fragile
watermark for this particular original signal. Based on
these factors, a estimate is made of the amount of

15   processing that the steganographic signal has undergone.
This processing can include, for example, A/D and D/A
conversions, resampling, band-limiting, perceptual
compression/decompression, etc. Optionally, the
fragility profile is derived prior to the distribution

20   of the content and communicated by the steganographic
signal for recovery by the decoder. Furthermore, a
robust watermark may be provided in the steganographic
signal that, e.g., designates the presence of the
fragile watermark to a decoder.